On the Biology of Propagation of Some Species of the Arktiches- 2o-119-3-61/65
kaya (Arctic) and Amerikanskaya (American)Ornithofauna in North-Eastern
Yakutiya

Pall. Among the 3 kinds occurring here this eider-duck is the rarest and only lives in coastal areas. Grus canadensis L. It has already been spoken of the importance of this crane. It nests at the lower course of the river Chukoch'ya and is frequent. In the tundra at the Indigirka this kind is already lacking. This kind obviously is connected with hilly country, patches of shrubs and open pasture are colonized without distinction. Calidris testacea Pall. So far this kind was not reported in the Kolyma-tundra. It was frequently found nesting in coastal areas. Macrorhamphus griseus scolopaceus Say. This American bird is frequent in the Kolyma-tundra and nests here. Breeding and care for the young ones (warming) is an exclusive duty of the male animal. Xema sabini Sab. This interesting sea-gull was found nesting in the tundra near to the coast at the lower course of the river Kon'kova. Near to their nests men and birds flying past are vigorously attacked by these sea-gulls. For all kinds morphological, biological and ecological particularities are given.

ASSOCIATION: Yakutskiy filial Akademii nauk SSSR (Yakutsk Branch AS USSR)

Card 2/3

On the Biology of Propagation of Some Species of the Arktiches- 20-119-3-61/65
kaya (Arctic) and Amerikanskaya (American) Ornithofauna in North-Eastern
Yakutiya

PRESENTED: January 2, 1958 by K. I. Skryabin, Member, Academy of Sciences, USSR

SUBMITTED: December 29, 1957

AVAILABLE: Library of Congress

Card 3/3

VOROB'YEV, K.A.

Biology of propagation in certain representatives of arctic and American ornithofauna in northeastern Yakutia. Dokl. AN SSSR 119 no.3:609-612 Mr '58. (MIRA 11:6)

1.Yakutskiy filial AN SSSR. Predstavleno akademikom K.I. Skryabinym.
(Yakutia--Ornithology)

VOROB'YEV, Konstantin Aleksandrovich

(Kakutsk Branch of the Acad Scr USSR) - Academic degree of Doctor of Biological Sciences, based on his defense, 6 May 1955, in the Council of the Zoological Inst of the Acad Sci USSR, of his dissertation entitled: "Ornithological Fauna of Ussuriyskiy Kray and Its Zoogeographical Anaylsis."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 25, 10 Dec 55, Byulleten' MVO SSSR, Uncl. JPRS/MY 548

VOROB'YEV, K.A.

Some results of ornithological research in southern Yakutia [with summary in English]. Zool. zhur. 37 no.3:465-469 Mr '58.
(Yakutia--Birds) (MIRA 11:4)

S/117/60/000/005/005/013
A004/A002

AUTHORS: Vorob'yev, K. G., Sychev, Yu. N.

TITLE: Friction Disks With Ceramet Layer

PERIODICAL: Mashinostroitel', 1960, No. 5, p. 21

TEXT: At the Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev) ceramet-reinforced steel disks instead of bronze ones are used in multi-disk friction couplings operating in an oil medium of the multi-spindle semi-automatics "Krasnyy proletariy" and "Bullari". The basic steel disks are copper plated in a cyanide solution with subsequent diffusion annealing in a hydrogen atmosphere at 950°C for 2.5 hours. The ceramet layer has the following composition (in %): electrolytic copper powder = 70, tin powder = 9, lead powder = 6, graphite = 4, iron powder = 4, sand = 4, asbestos fiber = 3. Metal powders and asbestos fiber are mixed in a mixer during 3-4 hours. The ceramet mixture is pressed in press-molds with a specific pressure of 2.2 t/cm^2. The basic copper-plated steel disks and the ceramet disks are baked together in a special furnace in a hydrogen atmosphere at temperatures

Card 1/2

Friction Disks With Ceramet Layer

S/117/60/000/005/005/013
A004/A002

in the range of 760-780°C during 2.5 - 3 hours. The disks are then cooled in a reducing atmosphere where the same pressure is maintained. The life of these ceramet-reinforced steel disks exceeds that of bronze disks by 5 times, which resulted in savings of 50,000 rubles per year. There are 3 figures and 1 table. √

Card 2/2

VOROB'YEV, K.G.

AUTHOR: Vorob'yev, K.G. 121-4-15/32

TITLE: Rating of Cutting Tool Requirements per Machine Tool (Normirovaniye raskhoda rezhushchego instrumenta na stanok)

PERIODICAL: Stanki i Instrument, 1958, No.4, pp. 30 - 31 (USSR).

ABSTRACT: The reference unit for rating is a round number of hours worked by the machine tool. A broad classification of machine tools suitable for cutting tool rating is given. In production, each available machine tool is planned to work for a certain number of hours. Out of the total tool assortment required for that machine tool, each cutting tool is planned to occupy a certain percentage of the total machine tool hours. The tool life is predicted from experience. These data combine to set up the rated tool requirements.

AVAILABLE: Library of Congress

Card 1/1

1. Machine tools-Standards

SYCHEV, Yu.N.; VOROB'YEV, K.G., inzh.

Lead limiters used in elctric bridge cranes and telphers.
Mashinostroitel' no.11:39-40 N '58. (MIRA 11:12)
(Cranes, derricks, etc.--Safety measures)

SYCHEV, Yu.N.; VOROB'YEV, K.G., inzh.

Improving the technology of repairing plant equipment. Mashinostroitel' no.1:25-32 Ja '59. (MIRA 12:2)
(Machine tools--Maintenance and repair)

VOROB'YEV K. G.

AUTHOR: Sychev, Yu.N., and Vorob'yëv, K.G., Engineer 117-58-5-3/24

TITLE: Modernization of Metal Cutting Equipment (Modernizatsiya metallorezhushchego oborudovaniya)

PERIODICAL: Mashinostroitel' 1958, Nr 5, pp 7-12 (USSR)

ABSTRACT: The clamping, unclamping, chamfering and cutting-off work on stock was formerly done by hand on the turret lathe (model 1338) at the Izhevsk Plant. To increase the efficiency of this machine the transverse support was replaced by a special pneumatic gear connected with 2 copying devices. The rotation of the driving spindle is transmitted by a worm gear to the distribution disc fitted with a number of cams located on 2 different levels. The pneumatic gear consists of a series of valves, pipes and cylinders in which the pistons are set in motion by hydraulic pressure, regulated by the opening and closing of valves under the action of the cams of the distribution disc. In this way the operations formerly executed by hand have become mechanized. One copying device controls the chamfering and the other the cutting-off process of the blank. On the internal grinding machine "Bryant" (model 112 AN) the dimensions of the opening had to be checked frequently. This work is being done automatically since the

Card 1/2

installation of hydraulic gear for automatic checking. Figure 2 shows the automatic measuring device mounted on a lathe; figure 3 shows the details of the mechanism. Figure 4 gives a general and sectional view of the automatic measuring unit. The operation is illustrated on a kinematic diagram, figure 5. The modernization of semi-automatic turret lathe of the firm "Monforts" is shown in Figures 7,8 and 9. It provides for a change in construction of the head, as a result of which the four-positional machining is replaced by an eight-positional one. Modernization of the machine increased the efficiency, the variety of machining processes and the speed of operations. There are 9 figures.

ASSOCIATION: Moskovskiy avtozavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev)

AVAILABLE: Library of Congress

Card 2/2 1. Cutting tools-Automation

SOV/117-58-11-28/36

AUTHORS: Sychev, Yu.N., Vorob'yev, K.G., Engineer

TITLE: A Device for the Protection of Electric Bridge Cranes and Electric Telphers From Overload (Prisposobleniye dlya predokhraneniya elektromostovykh kranov i elektrotel'ferov ot peregruzki)

PERIODICAL: Mashinostroitel', 1958, Nr 11, pp 39 - 40 (USSR)

ABSTRACT: At the Moskovskiy avtomobil'nyy zavod imeni Likhacheva (Moscow Automobile Plant imeni Likhachev), a device has been developed for protecting electric bridge cranes and telphers from overload. The device for electric cranes is shown in Figure 1. It is installed on an immobile cable of the crane (Figure 2). The cable is connected with a spring (17). The spring is set for a certain load by the nut (13). If the load surpasses 10% of this value, the spring is tightened and the electric motor is switched off. The device for electric telphers (Figure 3) is similar in operation and construction. It is installed on a branch of the telpher cable. There are 3 diagrams.

1. Mobile hoists---Protective devices 2. Mobile hoists---Performance 3. Electric motors---Control systems

Card 1/1

SYCHEV, Yu.N.; VOROB'YEV, K.G.

Modernizing semiautomatic turret lathes. Stan. i instr. 29 no.7:31-32 Jl '58. (MIRA 11:9)
(Lathes)

VOROB'YEV, K.G., inzh.; SYCHEV, Yu.N.

Modernizing shaping machines. Mashinostroitel' no.3:15-16 Mr '59. (MIRA 12:3)

(Shapers)

SOV/122-58-8-23/29

AUTHORS: Sychev, Yu.N. and Vorob'yev, K.G., Engineer

TITLE: Improvements in Repair Methods of Factory Plant (Sovershenstvovaniye tekhnologii remonta zavodskogo oborudovaniya)

PERIODICAL: Vestnik mashinostroyeniya, 1958, Nr 8, pp 57-60 (USSR)

ABSTRACT: Several repair fixtures, procedures for the replacement of scarce materials and for increasing the service life of major machine-tool components adopted at the motor-car plant "imeni Likhacheva" in Moscow are described. A universal grinding fixture for the slideways of metal-cutting machine tools is illustrated (Figure 1). Set-ups are shown for grinding the flat slideway and the V-slide-ways starting from the reference planes; namely, the mounting faces for the headstock and the tailstock.. Planing machines are repaired with the help of the same grinding fixture. A portable milling fixture and head are shown (Figure 3), developed for the milling of horizontal forging machine bed. This fixture is claimed to have reduced the period of unserviceability due to repair by up to 10 days. A new fixture (Figure 4) has been developed for cutting, by the generating method, the racks of tooth-

Card1/3

Improvements in Repair Methods of Factory Plant

shaping machines. The fixture consists of a base, a table, and a rack in engagement with a pinion. A dynamometer designed to measure the stiffness of metal-cutting machine tools is shown in Figure 5. It is based on he ring element, measuring the distortion transversely to the pull by means of a dial gauge. Vibration pads to isolate steam-air hammers are mentioned. A new method of restoring the dimensions of bronze bearing sleeves in diameters above 100 mm has been adopted. The sleeve is cut along the generating line and the sharp edges are removed. The sleeve is then clamped by two yokes and brazed with brass along the cuts. After turning the outside, a coarse thread is cut and the sleeve is metallised with annealed, low-carbon steel wire, ensuring that the temperature does not exceed 70 °C. Subsequently, the sleeve is machined inside and outside. Surface flame hardening has been extensively applied. Both steel and cast-iron components are flame-hardened at a burner speed of advance of 80-160 mm/min. Hollow, slotted boring tools with a single-point cutter are used for the machining of plain bearings lined with cast antifriction alloy.

SOV/122-58-8-21/29

Improvements in Repair Methods of Factory Plant

The boring tool has a front collar to bore size; the remainder is relieved to leave a clearance of 0.6 - 1.0 mm. The tool is mounted in the tailstock of an engine lathe. Split permanent moulds (Figure 7) for the casting of bearing sleeve halves in a zinc alloy have been adopted. The alloy is poured from a crucible into the mould which has been heated to 200 - 250 °C. Zinc-alloy pads in heavy machine tools preserve the service life of slideways. These pads can be cast into special permanent moulds. There are 8 figures.

Card 3/3 1. Industrial equipment---Maintenance

SOV/117-59-3-8/37

25(2)

AUTHORS: Vorob'yev, K.G., and Sychev, Yu.N.

TITLE: The Modernization of Shaping Machines (Modernizatsiya poperechno-strogal'nykh stankov)

PERIODICAL: Mashinostroitel', 1959, Nr 3, pp 15 - 16 (USSR)

ABSTRACT: The described modernization, i.e. design improvement, concerns the "735(Sh-4)" and "736(Sh-5)" shapers at the Moskovskiy avtozavod im. I.A. Likhacheva (Moscow Automobile Plant imeni Likhachev). The design improvement consists in the use of new mechanisms for the mechanical displacement of the machine table, which until now was done manually and was arduous work. The idle-run speed of the table with the new feed mechanism is between 1.5 and 2.25 m/min, depending on the rpm of the motor. There are 4 diagrams.

Card 1/1

VOROB'YEV, K.G.

117-58-6-3/36

AUTHORS: Sychev, Yu.N., Vorob'yëv, K.G., Engineer

TITLE: The Modernization of Forging and Pressing Equipment (Modernizatsiya kuznechno-pressovogo oborudovaniya)

PERIODICAL: Mashinostroitel', 1958, Nr 6, pp 5-9 (USSR)

ABSTRACT: In the steam-air punching hammers type "Iri" and "Banning" the wedges for regulating the distance between the frames on the anvil block and the method of their fastening had serious drawbacks. The constant vibrations of the frames loosened the wedges at their connections and often cut the strengthening bolts. In order to increase the reliability of the fastenings, rectangular grooves were cut into wedges (figure 1). A blocking comb was fitted to the frame for fastening the wedges (Figure 2). The new method for fastening the wedges is shown in figure 3. The flanges of the protective and working cylinders in the hammers type "Iri" were fastened by bolts. Weakening of the bolts caused a leaking of the copper packing. In the flanges of the casing of the protective cylinder a groove was bored (Figure 4). Another groove was made in the working cylinder

Card 1/4

and both were closely fitted together.
Steam pressure during the working of the hammers type "Iri" and "Chembersburg" reaches 9-10 atm, the temperature 270-280°C. The best stuffing-box packings have only a short life under these conditions. In order to remove the stuffing box of the coupling rod from the zone of high temperature, the construction of the lower cover of the cylinder has been changed. The opening was enlarged (Figure 5) and a transitional bush pressed into it. This change in construction moves the stuffing-box packing 100 mm from the zone of high temperatures. Steam condensate no longer gets into the working place.
The sub-cylinder plate for the installation of the working cylinder in hammers of various types has a flat surface. Weakening of the cylinder fastening caused a displacement of the casing. A lock 25 mm in height was therefore fastened to the sub-cylinder plate of the hammers "Iri", "Chembersburg", and "Banning" preventing the cylinder from displacement.
Hammers of the type "Massey" with a power of 1.5 and 5 t have been modernized, to increase rigidity of construction and to reduce wear of moving parts. Two cast iron supporting plates which were fastened in a concrete foundation, were

replaced by a single steel plate (Figure 7) rigidly connecting the frames. Each frame is installed between supports and is fastened by a special bolts. The construction of the coupling rod was also changed to facilitate its replacement during overhaul. The coupling rod was designed without reinforcements (Figure 8). Its working diameter was increased from 115-140 mm. The stuffing box was made non-detachable (Figure 9) with 142 mm as the interior diameter of the axle bearing. After modernization the method of shock absorption was also changed. On the working cylinder (Figure 10) a pneumatic protective cylinder was fitted in place of the upper cover. In the connection between the frames (Figure 11) and the cylinder casing, shock absorbing springs were fitted. In the frictional falling hammers type "Billing i Spenser" the method of lifting was changed from the mechanical to the pneumatic principle. In the former hammers, the heavy beats against the pivot bolt often destroyed the frame and caused many parts to get out of order. The hammers were therefore fitted with a simple pneumatic device for lifting the ram (Figure 12). This device, simplifies hammer control, reduces cases of frame breakage, prevents accidents, and is reliable in operation.

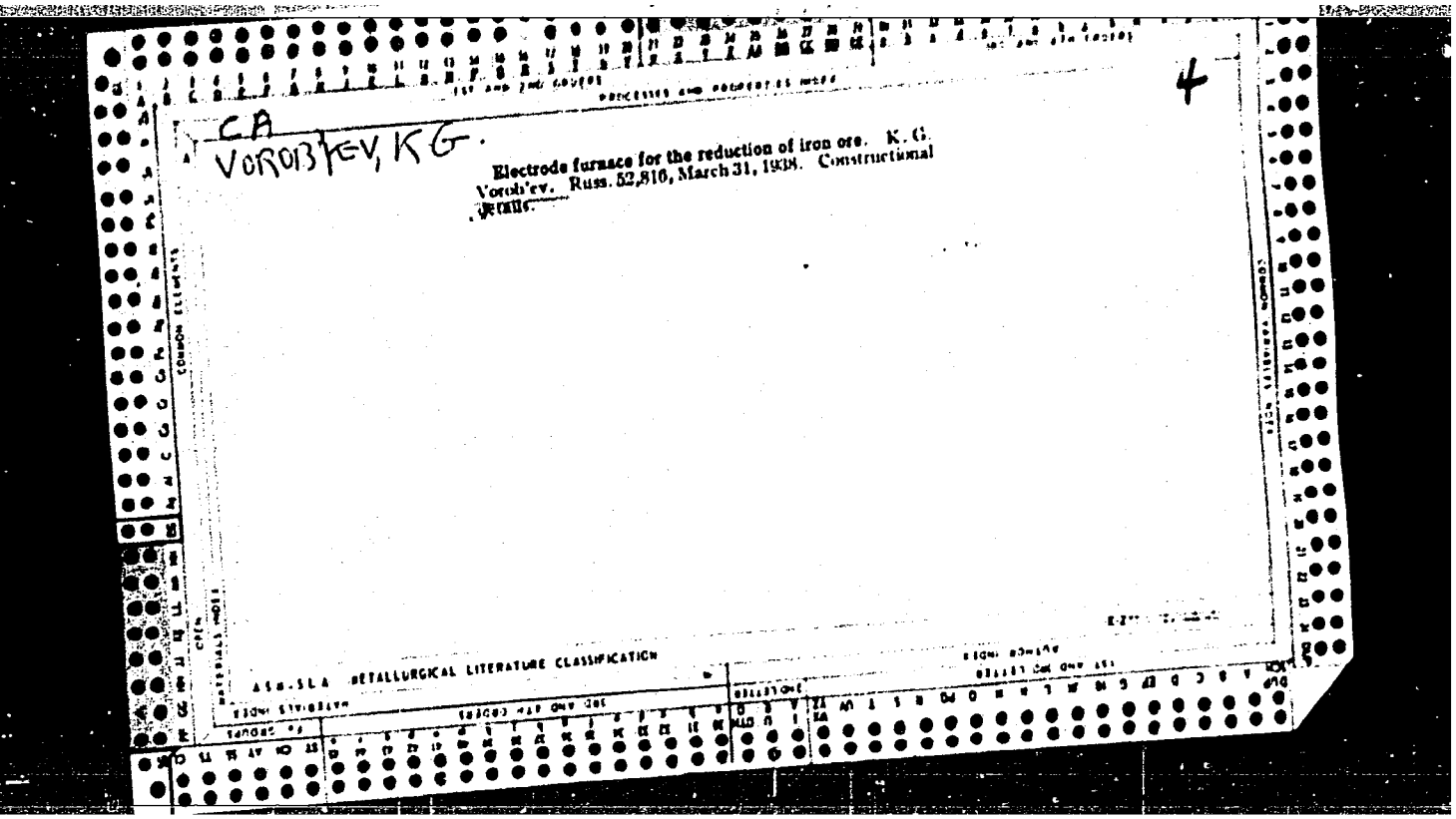
The Modernization of Forging and Pressing Equipment 117-58-6-3/36

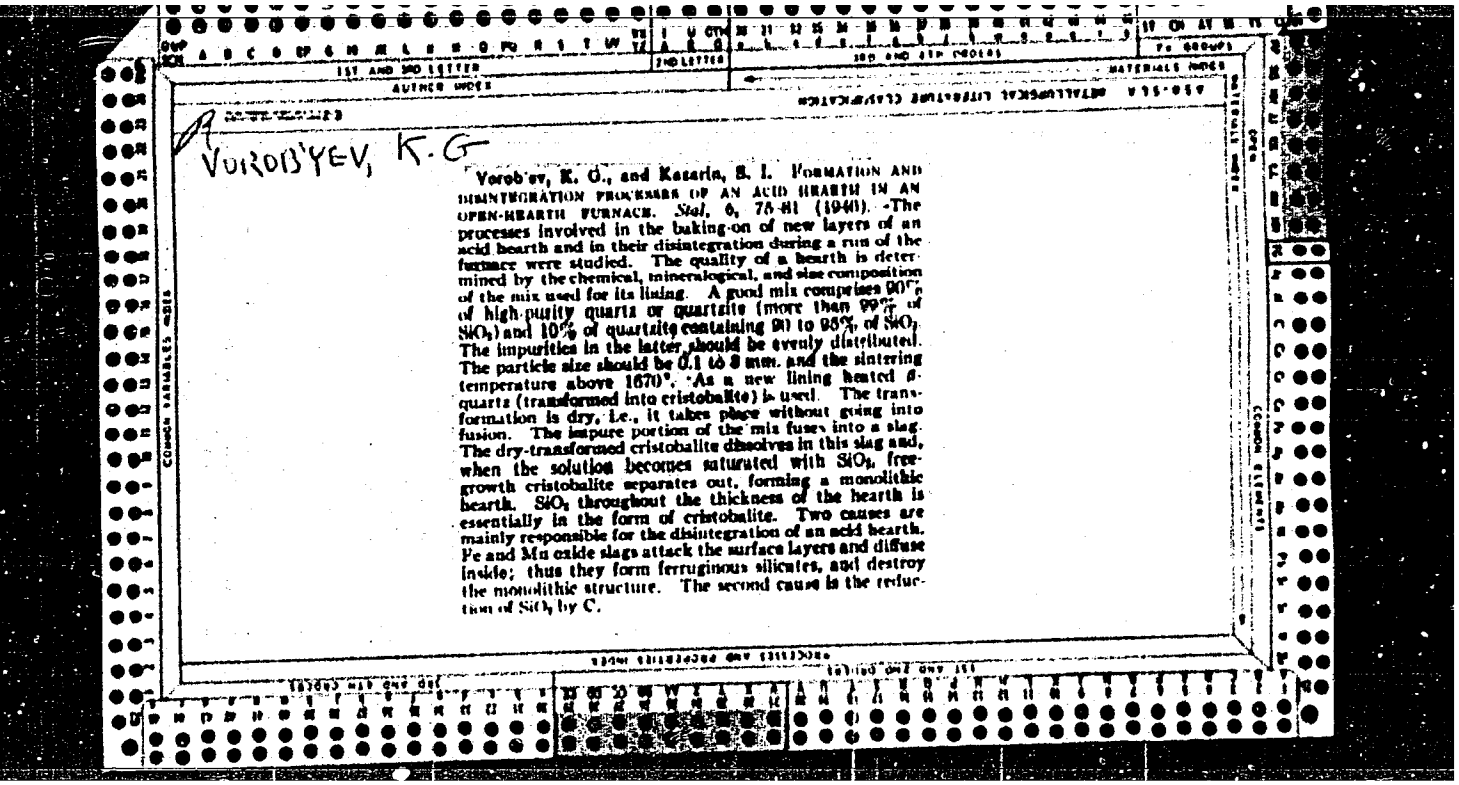
There are 12 figures.

ASSOCIATION: Moskovskiy avtozavod imeni I.A. Likhacheva (Moscow Motorcar Plant imeni I.A. Likhachev)

AVAILABLE: Library of Cohgress

Card 4/4 1. Forging equipment-Modernization 2. Pressing equipment-Modernization





VOROB'YEV, K.G

Vorob'ev, K. G., and Kazaria, S. I. FORMATION AND DISINTEGRATION PROCESSES OF AN ACID HEARTH IN AN OPEN-HEARTH FURNACE. *Stal*, 6, 78-81 (1940). -The processes involved in the baking-on of new layers of an acid hearth and in their disintegration during a run of the furnace were studied. The quality of a hearth is determined by the chemical, mineralogical, and size composition of the mix used for its lining. A good mix comprises 90% of high-purity quartz or quartzite (more than 99% of SiO_2) and 10% of quartzite containing 90 to 95% of SiO_2. The impurities in the latter should be evenly distributed. The particle size should be 0.1 to 8 mm. and the sintering temperature above 1670°. As a new lining heated β-quartz (transformed into cristobalite) is used. The transformation is dry, i.e., it takes place without going into fusion. The impure portion of the mix fuses into a slag. The dry-transformed cristobalite dissolves in this slag and, when the solution becomes saturated with SiO_2, free-growth cristobalite separates out, forming a monolithic hearth. SiO_2 throughout the thickness of the hearth is essentially in the form of cristobalite. Two causes are mainly responsible for the disintegration of an acid hearth. Fe and Mn oxide slags attack the surface layers and diffuse inside; thus they form ferruginous silicates, and destroy the monolithic structure. The second cause is the reduction of SiO_2 by C.

SYCHEV, Yu.N.; VOROB'YEV, K.G., inzh.

Improving the technology of repairing plant equipment. Vest. mash. 38 no. 8:57-60 Ag '58. (MIRA 11:8)
(Machinery--Maintenance and repair)

SYCHEV, Yu.N.; VOROB'YEV, K.G., inzh.

Modernization of the forging and pressing equipment. Mashinostroitel' no.6:5-9 Je '58. (MIRA 11:6)

1. Moskovskiy avtozavod imeni I.A. Likhacheva.
(Forging machinery)

VOROBIYEV, K.G.

Setting norms for numbers of cutting tools used in machine tools. (MIRA 11:5)
Stan. i instr. 29 no.4:30-31 Ap '58.
(Cutting tools)
(Machine-shop practice)

VOROB'YEV, K.G., inzh.; SYCHEV, Yu.N.

Experience in modernizing automatic machine tools at the Likhachev Automobile Plant. Vest. mash. 38 no.4:45-49 Ap '58. (MIRA 11:3)
(Machine tools) (Automobile industry)

VOROB'YEV K.G.

SYCHEV, Yu.N.; VOROB'YEV, K.G., inzh.

Modernizing the 12-OA automatic trimmers. Mashinostroitel' no.9:26-27 S '57. (MLRA 10:9)

(Punching machinery)

VOROB'YEV, K.G.

VOROB'YEV, K.G.; SYCHEV, Yu.N.

Modernizing forging and pressing equipment. Stan.i instr. 28 no.8:35-36 Ag '57. (MIRA 10:9)
(Power presses) (Forging machinery)

VOROB'YEV, K.G.

MELESHKEVICH, P.S.; VOROB'YEV, K.G.; SYCHEV, Yu.N.

Attachement for cutting racks on gear shapers. Stan. i instr. 28 no.5:37 My '57. (MLRA 10:6)

(Gear-cutting machines)

VOROB'YEV, K.G.

SYCHEV, Yu.N.; VOROB'YEV, K.G.

Modernizing internal grinding machines. Stan.i instr. 28 no.6:31-32 Je '57. (MLRA 10:8)

(Grinding machines)

VOROBYEV, K.G.

AUTHOR VOROBYEV, K.C., SYCHEV Yu.N.

TITLE From works' Practice. The Modernization of the Forging-Press Equipment. (Iz zavodskoy praktiki. Modernizatsiya kuznechno - pressovogo oborudovaniya.- Russian)

PERIODICAL Stanki i Instrument 1957, Vol 28, Nr 8, pp 35-36 (USSR)

ABSTRACT The switch-in mechanism as well as the brake of the operation of the horizontal forging press model 3" (76,2 mm) were modernized. The switch-in mechanism, which is fitted to the crankshaft, was replaced by a pneumatic coupling on the driving shaft which excludes the constant freewheeling of the driving shaft and reduces consumption and noise. An illustration shows the coupling, which is described. The brake was shifted from the pivot of the crankshaft to the extended driving shaft. On the stand next to the brake drum a pneumatic control cylinder of the brake is mounted which is blocked by means of the pressure pipe of the switch. Control of the brake is carried out by means of an air-distributing device which is operated by means of a duplicating device at the end of the crankshaft. In consequence of this rebuilding the stress as well as the consumption of the crankshaft and of the

CARD 1/2

...ongress.

VOROB'YEV, K.G.; SYCHEV, Yu.N.

Improving bar clamps on four-spindle automatic machines. Stan.i instr. 28 no.3:36-37 Mr '57. (MLRA 10:5)
(Machine tools--Attachments)

VOROB'YEV, K.G.; SYCHEV, Yu.N.

Portable miller for machining die supporting surfaces of horizontal forging machine beds. Stan. i instr. 27 no.11:39 N '56.
(MLRA 10:1)

(Milling machines) (Forging machinery--Repairing)

VOROB'YEV, K.G.

AUTHOR: SYCHEV, YU.N., VOROB'YEV, K.G. PA - 3622
TITLE: Modernization of an Internal Grinding Machine. (Modernizatsiya vnutrishlifoval'nogo stanka, Russian)
PERIODICAL: Stanki i Instrument, 1957, Vol 28, Nr 6, pp 31-32 (U.S.S.R.)

ABSTRACT: Such a modernization was carried out in the Moscow I.A.LIKHACHEV automobile factory in order to increase efficiency and to diminish waste. The grinding machine used for this purpose was one made by the firm of Braillant, mod. 112 A.N. Before modernization, it was necessary to check the grinding diameter several times during grinding in order to warrant the required accuracy. If checking was carried out too late this frequently caused waste. In the course of modernizing this machine a device was constructed which permits automatic control of the grinding diameter during the process of grinding in that, as soon as the desired diameter is attained, the grinding wheel is automatically withdrawn from the workpiece. By fitting an automatic control mechanism and by interrupting the work of grinding as soon as the desired diameter is attained, waste was eliminated, and by the reduction of working time (measuring time hitherto needed) a considerable increase of output was attained. Such a modernization can be carried out with internal

Card 1/2

Modernization of an Internal Grinding Machine. PA - 3622

grinding machines of various types and sizes. The process of reconstruction is shown and described in detail. (3 Illustrations).

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Vorob'yev, K.G. and Sychev, Yu. N. 601

TITLE: The Modernisation of the Bar Stop Mechanism in Four-Spindle Automatic Screw Machines. (Modernizazsiya Uzla Upora Materiala Chetyrekhshpindel'nykh Avtomatov).

PERIODICAL: "Stanki i Instrument" (Machine Tools and Cutting Tools, No.3, 1957, pp.36-37. (U.S.S.R.).

ABSTRACT: Details of a modification are described applied to the (German) Hasse-Wrede four-spindle automatic screw machine (maximum bar diameter 38 mm), wherein the existing cross-head sliding member is replaced by an improved cross-head member which carries on its cylindrical part an anti-friction sleeve on which the rod feed stop is mounted.

4 illustrations.

Card 1/1

Subject : USSR/Engineering AID P - 5357

Card 1/1 Pub. 103 - 12/25

Authors : Vorob'yev, K. G. and Yu. N. Sychev

Title : Devices for grinding the frames of machine tools in repair.

Periodical : Stan. i instr., 8, 34-35, Ag 1956

Abstract : The authors give concise description of devices for machining the frames of turning lathes and longitudinal planing machines during reconditioning used at the Moscow Automobile Plant im. Likhachev. Five drawings.

Institution : As above

Submitted : No date

VOROB'YEV, K.G.; SYCHEV, Yu.N.

Improving repair techniques for steam-pneumatic forging hammers.
Stan.i instr. 27 no.6:32-35 Je '56. (MLRA 9:9)
(Forging machinery)

VOROB'YEV, K.G.; SYCHEV, Yu.N.

New methods for repairing steam-pneumatic stamping hammers.
Vest. mash. 36 no.9:58-61 S '56. (MLRA 9:10)

(Machine-shop practice) (Forging machinery--Repairing)

VOROB'YEV, K.G.; SYCHEV, Yu.N.

Attachment for grinding lathe beds under repair. Stan.i instr. 27 no.8:34-35 Ap '56. (MLRA 9:9)
(Moscow--Grinding machines) (Lathes--Repairing)

Vorob'yev, K.G.

AID P - 5169

Subject : USSR/Engineering

Card 1/1 Pub. 103 - 10/19

Authors : Vorob'yev, K. G. and Yu. N. Sychev

Title : Improved methods for repair of steam pneumatic stamping presses.

Periodical : Stan. i instr., 6, 32-35, Je 1956

Abstract : The authors describe several cases of repair and alterations made in the "Eary", "Chambersburg" and "Banning" steam and pneumatic stamping presses at the Automobile Plant im. Stalin (ZIS). Fourteen drawings.

Institution : None

Submitted : No date

BUDNIKOV, P.P.; VOROB'YEV, Kh.S.

Investigating properties of portland cements with a high percentage of magnesium oxides. TSement 26 no.1:14-21 Ja-F '60. (MIRA 13:5)
(Portland cement)

VOROB'YEV, L.M.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/1 PG - 177
AUTHOR VOROB'EV L.M.
TITLE The applicability of the method of approximated integration due to S.A.Čaplygin to a class of ordinary, non-linear differential equations of second order.
PERIODICAL Uspechi mat.Nauk 11, No.1, 181-185 (1956)
reviewed 7/1956

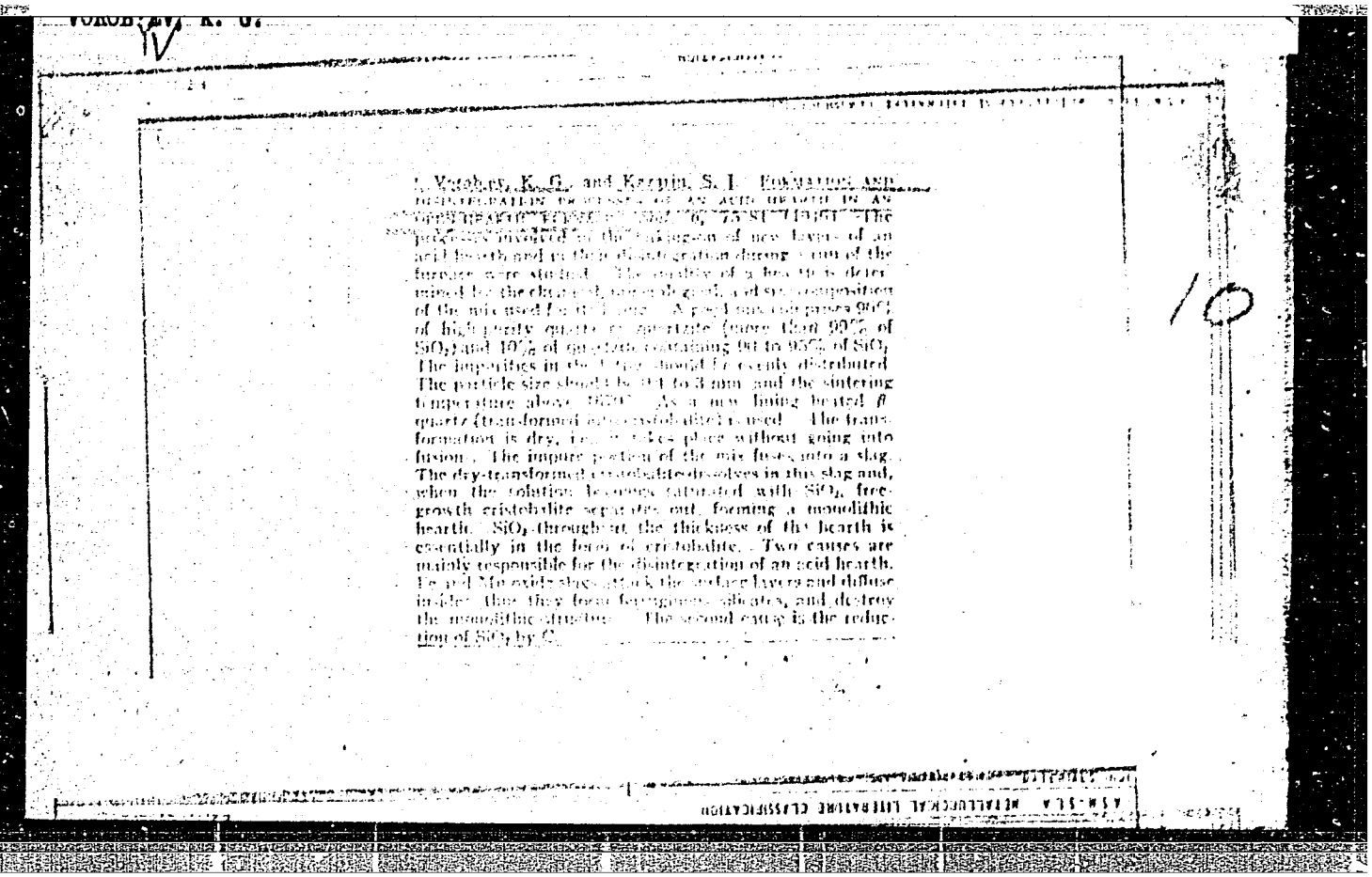
For the solution of $y'' = F(x,y,y')$, $y(x_0) = y_0$, $y'(x_0) = y_0' \geq 0$ (F and its derivatives continuous, $F > 0$ and $\partial F/\partial y > 0$ for $x_0 \leq x \leq x_1$, $y \geq y_0$, $y' \geq y_0'$) the author constructs two sequences of auxiliary equations of first order $dz_n'/dx = F(x,Z_{n-1},z_n')$, $du_n'/dx = F(x,U_{n-1},u_n')$ the solutions of which approximate the wanted solution from above and from below, respectively.

VOROB'YEV, K.G. ; SYCHEV, Yu.N.

Mechanization of heavy, labor-consuming operations for the repair of press-forging machinery. Kuz.-shtam. proizv. 1 no.8:38-41 Ag '59. (MIRA 12:12)
(Forging machinery--Maintenance and repair)

SYCHEV, Yu.N.; VOROB'YEV, K.G.

Modernization of automatic machine tools. Mashinostroitel' no.10: 11-14 O '59. (MIRA 13:2)
(Machine tools) (Automatic control)



VOROB'YEV, KH

BUDNIKOV, P., akademik; VOROB'YEV, Kh., inzhener.

Advantages of calcining magnesian clinker at lower temperatures.
Stroi.mat. 3 no.8:34 Ag '57. (MLRA 10:10)

1. AN USSR (for Budnikov).
(Cement kilns)

VoRoByev, Km S.

PHASE I BOOK EXPLOITATION SOV/3592

Vsesoyuznoye khimicheskoye obshchestvo imeni D.I. Mendeleyeva

Silikaty; sbornik statey po khimii i tekhnologii silikatov, vyp. 1 (Silicates; Collection of Articles on the Chemistry and Production of Silicates, No. 1) Moscow, Gosstroyizdat, 1959. 105 p. Errata slip inserted. 3,000 copies printed.

Editorial Board: M.A. Matveyev (Resp. Ed.), Yu.M. Butt, and M.O. Yushkevich; Ed. of Publishing House: V.A. Rozanova; Tech. Ed.: N.I. Rudakova.

PURPOSE: This booklet is intended for chemists and geologists interested in silicate analysis.

COVERAGE: This is a collection of articles on the chemistry and technology of silicates. The contributing authors discuss the effect of admixtures on sintering processes and on the properties of Portland cements. The text also discusses the properties of certain glasses, the processing of ceramic materials, the process of drying facing tile, the stability of solid solutions of calcium alumoferrite, the activation of cement, the production of aluminous cement, the preparation of pulping rolls, the interaction of quartz with lime, and various problems related to the production of silicate-calcite materials. No personalities are mentioned. References are given at the end of each article.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

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5-18-60

VOROB'YEV, Kh.S.; VOROB'YEVA, M.A.

Effect of various admixtures on physical and mechanical properties of magnesian portland cements. Silikaty no.1:52-58 '59.
(MIRA 13:2)
(Portland cement)

VOROB'YEV, Kh. S.

AUTHORS: Budnikov, P.P., Vorobyev, Kh.S. SOV/80-33-2-2/56

TITLE: Study of the Hydration Rate of Magnesium Oxide Burnt at Different Temperatures (Issledovaniye skorosti gidratatsii okisi magniya, obozhzhennoy pri razlichnykh temperaturakh)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 253-258 (USSR)

ABSTRACT: A high percentage of MgO in clinkers is the cause for the destruction of hardening cement. The rate of hydration of MgO and its relation to the burning temperature has been investigated. MgO which is burnt at 800°C is to 75% hydrated after moist storage of one day. An increase of the burning temperature to 1,400°C reduces the hydration rate sharply. The addition of a weak $MgCl_2$ solution increases the rate of hydration of MgO. At the addition of $MgSO_4$ the thermograms show the presence of other new formations. Autoclave processing at 8 atm ensures the complete hydration of MgO.

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SOV/80-32-2-2/56

Study of the Hydration Rate of Magnesium Oxide Burnt at Different Temperatures

There are 5 graphs, 1 histogram, 1 table, and 4 Soviet references.

SUBMITTED: June 13, 1957

Card 2/2

VOROB'YEV, K.P., podpolkovnik med.sluzhby, KUDRYAVTSEV, S.I., kapitan med. sluzhby.

Evaluation of methods for purifying air in controlling air-borne infections. Voen.-med.zhur. no.11:45-49 N'56 (MIRA 12:1)
(AIR--BACTERIOLOGY)

ZHMAYEVA, Z.M.; VOROB'YEV, K.P.; ARKHIPOVA, V.A.

On the distribution of ixodid ticks in Chardzhou Province [with English summary in insert]. Zool.zhur.35 no.5:700-704 My '56. (MLRA 9:9)

1.Otdel parazitologii i meditsinskoy zoologii (zav.-akad.Ye.N.Pavlovskiy) IEM AMN SSSR imeni N.F.Gamaleya.
(Chardzhou Province--Ticks)

113. Control of Air-Borne Infections

"Evaluation of a Method of Purifying the Air in Order to Control Air-Borne Infections," by K. P. Vorob'yev and S. I. Kudryavtsev, Voyenn-Meditsinskiy Zhurnal, No 11, Nov 56, pp 45-49

The article evaluates a method of improving sanitary-hygienic conditions of the air in classrooms, ventilation by means of air vents, and the use of bactericidal ultraviolet lamps of the BUV-30-P type for disinfecting air. Observations made during the school terms of 1953, 1954, and 1955 in four classes of military medical institutions are presented. Investigations were performed in ventilated and unventilated rooms and during continuous ultraviolet irradiation of the air. As a rule, the rooms were occupied by 25-30 students during the investigations.

According to the article, the classrooms were ventilated by means of a small opening comprising approximately one eighth of the main window. Temperature and humidity were determined by means of an Assman psychrometer; the rate of movement of the air, by a catathermometer; CO_2, by the standard method; and dust content, by the gravimetric and calculating method. Air samples for bacterial seeding were taken at a height of 1.1 m from the floor by means of the Krotov apparatus and the Petri dish method. Media employed were meat-peptone agar, blood agar containing 5% glucose, and "Happo." Further details of sampling and testing procedures are given.

Table 1 presents data which show the effects of ventilation on changes in indexes of bacterial content of the air during 6 hours of occupancy. It is noted that bacterial content of the classroom air was found to be almost insignificant at the beginning of occupancy, and was six-eight times greater by the time the rooms were vacated. Cencentrations of hemolytic streptococcus and staphylococcus at various time intervals are discussed. A graph (Figure 1) shows bacterial density in the air for 6 hours in an unventilated classroom without ultraviolet irradiation. The authors note that no regularity in increase of bacterial content of the air was observed under these conditions. Ventilation for 5-8 minutes did not produce an appreciable change in the picture. The article mention that these data have been corroborated by other authors (Zubrilin, Dolivo-Dobrovol'skiy, Popovich).

BUV-30-P ultraviolet lamps were placed in two ventilated classrooms (two lamps per room); the lamps, each with two 30-watt bulbs, were mounted in duraluminum screen reflectors (P. A. Vavilin system) and suspended at a height of 2.1 m in the centers of the rooms. Figure 2 is a diagram of one of the classrooms showing the positions of the desks and the lamp. Irradiation was measured with an ultraviolet meter (type UFI No 1, Institute of Biological Physics, Academy of Sciences USSR). Results of the

measurements are given in Table 2. It is stated that the classrooms were irradiated continuously for 2-3 hours during occupancy; and it is noted that no increase in the initial bacterial content of the air occurred after irradiation. A graph (Figure 3) shows the bacterial content of the air in three separate experiments; as seen from this curve, the entrance of persons into the room occasioned a sharp increase in the bacterial content, which decreased toward the end of the first hour. Further observations are discussed.

The incidence of air-borne infections (influenza, angina, etc.) in persons occupying the irradiated and nonirradiated classrooms during the period of observation (1953-1955) was compared. Table 3 shows the incidence of various forms of air-borne infections in control classrooms compared with incidences recorded in irradiated classrooms. These statistics show that such diseases as influenza, rhinitis, and acute bronchitis were encountered more frequently in control rooms than in irradiated rooms. Influenza caused by type A_1 virus occupied first place in 1953 and 1954; forms of angina occupied last place. The highest figures were recorded for acute catarrhs of the upper respiratory tract in 1954 and 1955, and the lowest figures were for angina. (U)

VOROB'YEV, Kharlampiy Sergeyevich; MAZUROV, Dmitriy Yakovlevich; KHOKHLOV, V.K., retsenzent; KHRUSTALEVA, N.I., red.; YEZHOVA, L.L., tekhn. red.

[Heat-engineering calculations for cement kilns and instruments] Teplotekhnicheskie raschety tsementnykh pechei i apparatov. Moskva, Vysshaia shkola, 1962. 349 p. (MIRA 16:4)

1. Rukovoditel' laboratorii obzhiga Vsesoyuznogo nauchno-issledovatel'skogo instituta tsementnoy promyshlennosti (for Khokhlov).
(Cement industries--Equipment and supplies)

BLYUMEN, L.M.; BUTT, Yu.M.; VOROB'YEV, Kh.S.; KRUPIN, A.A.

Formation and properties of lime-belite binders. Stroi. mat. 11 no.8:29-31 Ag '65. (MIRA 18:9)

MONASTYREV, A.V.; MAZUROV, D.Ya.; VOROB'YEV, Kh.S.; RUTMAN, D.S.

Burning clays in a turbulent layer. Ogneupory 30 no.1:9-13 '65.
(MIRA 18:3)

1. Moskovskiy institut khimicheskogo mashinostroyeniya (for Monastyrev, Mazurov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut stroitel'nykh materialov i konstruktsiy Gosudarstvennogo komiteta po stroitel'nym materialam (for Vorob'yev). 3. Podol'skiy zavod ogneupornykh izdeliy (for Rutman).

VOROB'YEV, Kharlampiy Sergeyevich; MAZUROV, Dmitriy Yakovlevich; SOKOLOV, Aleksey Aleksandrovich. Prinimal uchastiye SEVAST'YANOV, Ye.F.; FUFAYEVA, G.I., red.

[Heat-engineering processes and the equipment of silicate using industries] Teplotekhnologicheskie protsessy i apparaty silikatnykh proizvodstv. Moskva, Vysshaia shkola, 1965. 772 p. (MIRA 18:8)

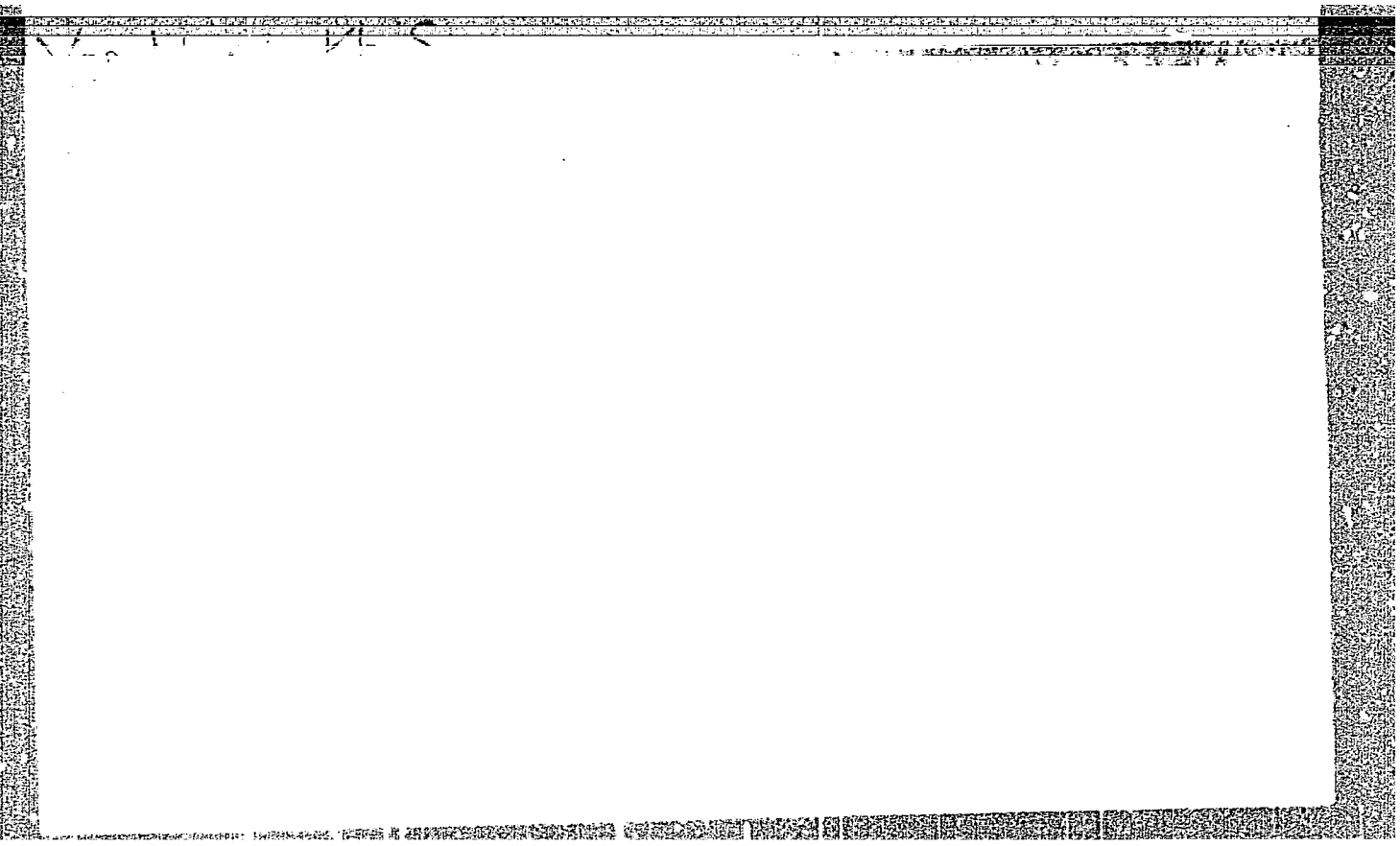
VOROB'YEV, Kh.S.; KRZHEMINSKIY, S.A.; KRUPIN, A.A.; MAZUROV, D.Ya.; NIKITIN, A.A.

Burning lime in suspension. Stroi. mat. 11 no.1:4-8 Ja '65. (MIRA 18:6)

VOROB'YEV, Kh.S., dotsent, kand.tekhn.nauk; KHOLIN, I.I., dotsent, kand. tekhn.nauk

Improving the conditions of heat transfer in reciprocating grate coolers. Nauch. soob NIITSementa no.9:1-5 '60. (MIRA 14:5)
(Cement clinkers--Cooling)

VOROB'YEV, Kh. S. Cand Tech Sci -- (diss) "Study of the properties of Portland cements with a high content of magnesium oxide." Mos, 1957. 16 pp (Min of Higher Education USSR. Mos Order of Lenin Chem-Technological Inst im D. I. Mendeleyev), 120 copies (KL, 44-57, 100)



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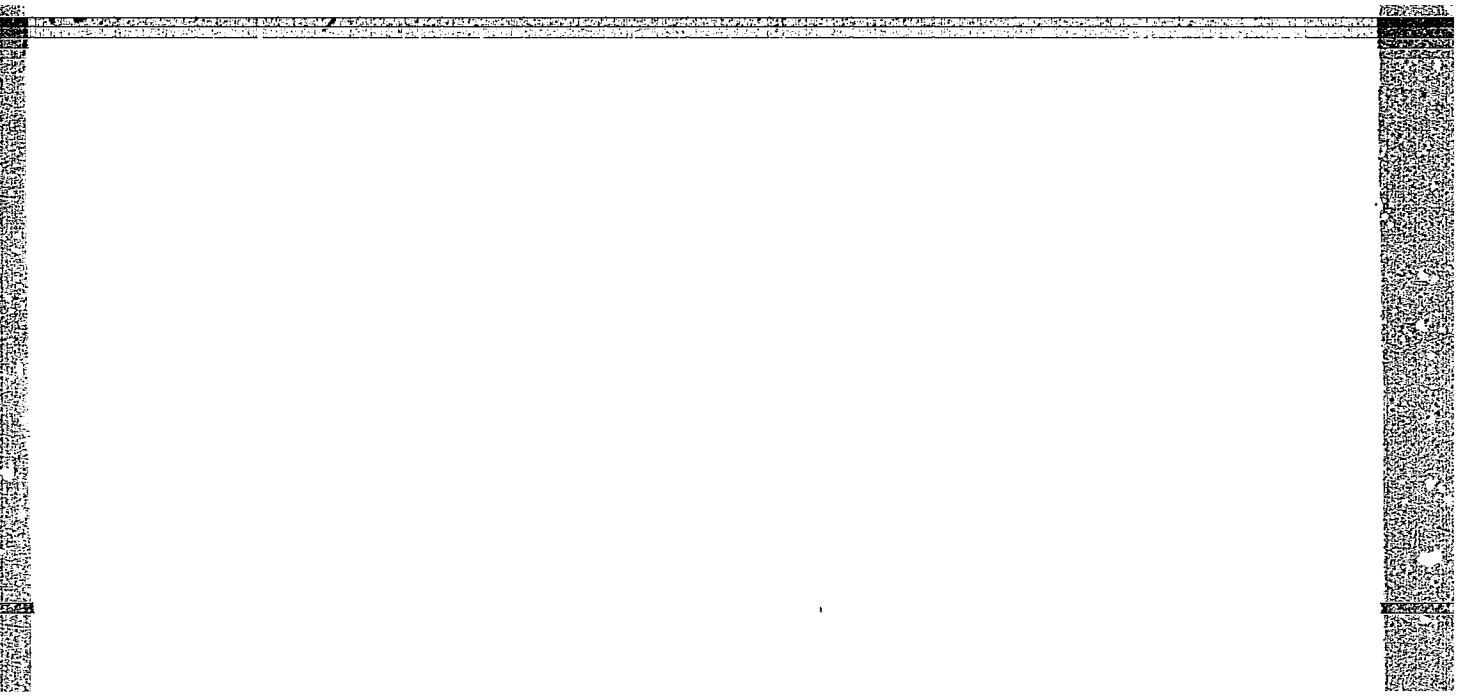

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BAKAKIN, V.P.; BUBOK, K.G.; BUGAREV, L.A.; BUNIN, A.I.; VOROB'YEV, K.V.
DROZDOV, V.V.; DOROKHOV, M.S.; ZUBRILOV, S.V.; IGNAT'YEV, L.A.
KARGOPOLOV, I.G.; KLUSHIN, D.N.; KOMAROV, A.M.; KURILOV, M.S.;
LOMAKO, P.F.; MIKULENKO, A.S.; MIKHAYLOV, M.M.; NEMTINOV, B.A.;
OL'KHOV, N.P.; OSIPOVA, T.V.; PAKHOMOV, Ya.D.; PLAKSIN, I.N.;
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SEMYNIN, A.P.; SPIVAKOV, Ya.N.; STRIGIN, I.A.; SUSHENTSOV, S.N.;
SYCHEV, P.S.; TROITSKIY, A.V.; USHAKOV, K.I.; KHARLAMOV, A.Ye.;
SHEMYAKIN, N.I.

Nikolai Konstantinovich Chaplygin. TSvet. met. 28 no.2:57-58
Mr-Ap '55. (MIRA 10:10)
(Chaplygin, Nikolai Konstantinovich, 1911-1955)

VOROB'YEV, L., podpolkovnik, dotsent, kand.tekhn.nauk

Measurement of the ground speed. Av.i kosm. 46 no.1:61-64 Ja '64. (MIRA 17:3)

NOVINSKIY, G., vrach; VOROB'YEV, L., insh.; VOROB'YEVA, I., biofizik

Diagnosis by instruments. Izobr.i rats. no.8:12-14 Ag '60. (MIRA 13:7)

(Diagnosis)
(Medical instruments and apparatus)

VOROB'YEV, L.; BELAN, S.; KAZACHUK, S.

Kazakhstan pledges a billion poods of grain. Mukh.-elev. prom. 24 no.4:2-3 Ap '58. (MIRA 11:5)

1. Ministerstvo khleboproduktov Kazakhskoy SSR (for Vorob'yev).
2. Direktor Shortandinskogo elevatora, Kazakhstan (for Belan).
3. Upravleniye khleboproduktor Karagandinskoy oblasti (for Kazachuk).
(Kazakhstan--Grain trade)

VOROB'YEV, L.

In response to the call of the party and the Communist Youth League. Muk. elev. prom. 24 no.11:3 N '58. (MIRA 11:12)

1. Ministerstvo khleboproduktov Kazakhskoy SSR.
(Kazakhstan--Grain trade)

AUTHOR: Vorob'yev, L., and Rudin, M. SOV-3-58-10-6/23

TITLE: The Road to Science (Put' v nauku)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 10, pp 38 - 40 (USSR)

ABSTRACT: The authors give a short review of the development and activity of the Students' Scientific Society of the Leningrad Technological Institute imeni Lensovet. The society was founded in 1903 and comprises at present 59 circles led by renowned scientists. The present number of members exceeds 1,000.

ASSOCIATION: Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute imeni Lensovet)

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VOROB'YEV, L.

New group of best grain drying specialists in Kazakhstan.
Muk.-elev. prom. 25 no.4:3 Ap '59. (MIRA 13:1)

1.Planovo-ekonomicheskoye upravleniye Ministerstva khleboproduktov Kazakhskoy SSR.
(Kazakhstan--Grain--Drying)

VOROB'YEV, L.

New method in deviation work. Grazhd.av. 13 no.10:4-5 O '56. (MLRA 10:1)
(Airplanes—Piloting) (Compass)

Vorob'yev, L.

AID P - 896

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 6/19

Author : Vorob'yev, L., Capt.

Title : Calculation of an average wind in an air layer with help of a wind-speed indicator

Periodical : Vest. vozd. flota, 5, 28-30, My 1954

Abstract : The author indicates a method of calculation of the average wind with the help of a wind-speed indicator in a layer of air. In order to determine the drift of loads delivered by parachutes, the author indicates a method of calculation of the average wind in the layer of air through which the load travels. Diagram, tables, formulae.

Institution : None

Submitted : No date

Vorob'yev, L.

AID P - 961

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 5/21

Authors : Vorob'yev, L., Capt. and Malafeyev, Ye., Capt.

Title : Solution of deviation problems in modern aircraft and helicopters

Periodical : Vest. vozd. flota, 12, 26-32, D 1954

Abstract : The author suggests a simplified method of calculation of deviation. At present in order to calculate deviation, the aircraft (or helicopter) must usually made three 360° turns. In the suggested method this calculation is possible by making two turns. During the first turn the half turn deviation of both compasses is determined and thus the installation error of compasses is eliminated. During the second turn the definitive deviation is determined. Diagrams, graphs, tables, formulae.

Institution : None

Submitted : No date

VOROB'YEV, L.

AID P - 3305

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 11/20

Author : Vorob'yev, L., Capt.

Title : The use of automatic navigational devices in long distance flights

Periodical : Vest. vozd. flota, 11, 52-55, N 1955

Abstract : The author discusses the technic of the calculation of errors of automatic navigational devices. He indicates methods of increasing the exactitude of navigation. Examples, diagrams.

Institution : None

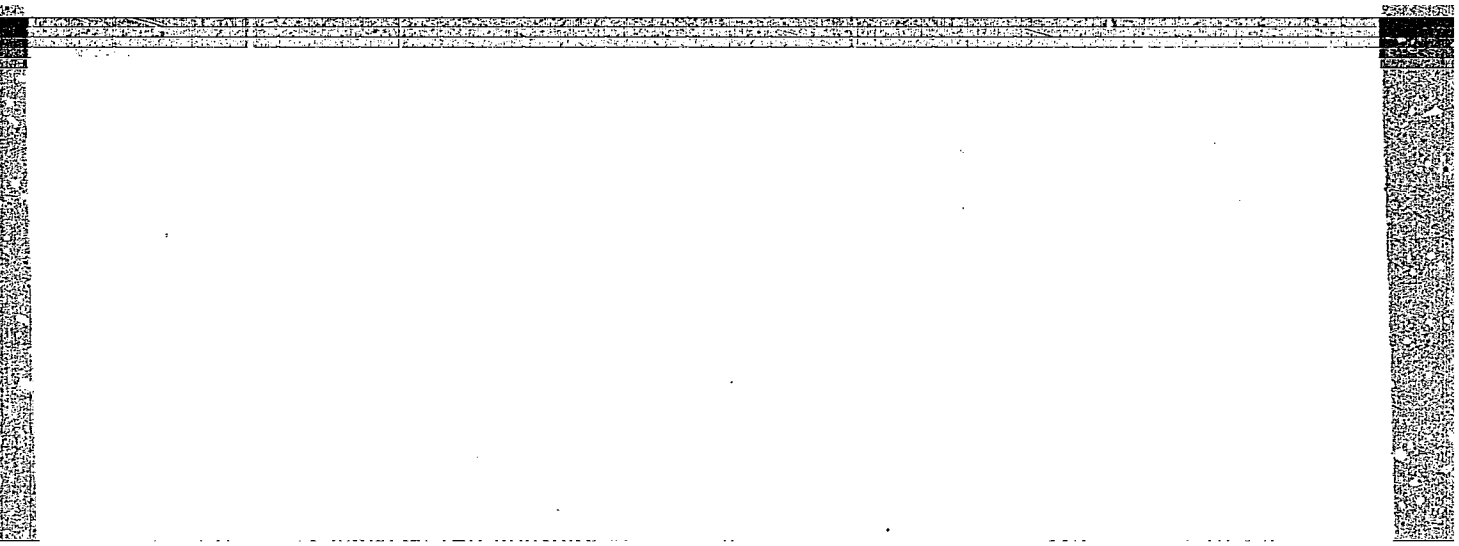
Submitted : No date

VOROB'YEV, L., kapitan

Computation of the average wind in layer of air by means of a drift computer. Vest.Vozd.Fl. 37 no.5:28-30 My '54.
(Winds) (MLRA 8:8)

VOROB'YEV, L., podpolkovnik, dotsent, kand.tekhn.nauk

Measuring the true course during the night. Av.i kosm. 45
no.2:50-53 F '63. (MIRA 16:2)
(Navigation (Aeronautics))



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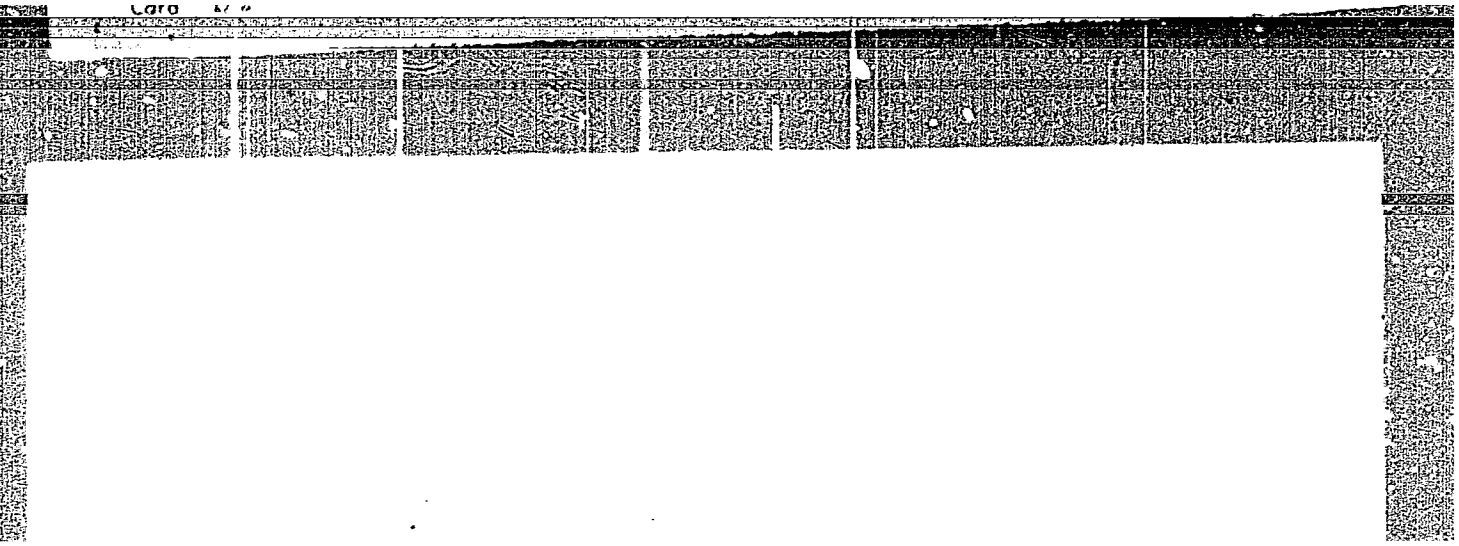

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VOROB'YEV, L.K.

9(4) PHASE I BOOK EXPLOITATION SOV/2773

Poluprovodnikovyye termosoprotivleniya; sbornik statey (Thermistors; Collection of Articles) Moscow, Gosenergoizdat, 1959. 229 p. 13,000 copies printed.

Ed. (Title page): B. S. Sotskov, Doctor of Technical Sciences, Professor; Ed. (Inside book): V. A. Petrov; Tech. Ed.: G. I. Matveyev; Editorial Board: B. S. Sotskov, Doctor of Technical Sciences, Professor (Chief Ed.), N. P. Udalov, Candidate of Technical Sciences, N. S. Zaytsev, Engineer, Ye. N. Shugorev, Engineer, and V. I. Turkulets, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical personnel of plants, OKB, NII and also instructors and students of vuzes.

COVERAGE: The book contains articles dealing with problems of manufacture of thermistors and determining thermistor parameters and characteristics. The authors also discuss problems of industrial application of thermistors as control elements. The book is an effort of cooperation by scientists of a number of vuzes, members of NII and engineers of one of the plants (name is not given) of Mosgorsovnarkhoz. No personalities are mentioned. References appear at the end of some articles.

Bocharov, G. K., L. E. Panasyuk and M. M. Pisevich. UTS-1 Temperature Signalling Device 198

The authors discuss the construction of a temperature signalling device for controlling temperature of bearings of various units of power plants such as boilers, turbines, etc. He describes the principle of its operation and explains the construction of a thermistor heat detector cell. There are 3 references, all Soviet.

Vorob'yev, L. K. Use of Thermistors for Controlling Temperature in Refrigerator Railroad Cars. 203

The author discusses the experience acquired in using MMT-1 and TOS-M types of thermistors for remote control and measuring temperature in refrigerator railroad cars. He presents circuits used and describes their operation. There are 3 references, all Soviet (including 2 translations).

Barsukov, D. V. Selection of Circuit Elements for Regulating Temperature in Networks With Thermistors on The Basis of Relay Effect 206

The author discusses methods of calculating circuits for regulating temperature in networks with thermistors on the basis of the relay effect. He also explains the concept of relay effect in some types of thermistors. There are 2 references, both Soviet.

Shorin, L. A. Use of Thermistors in Hydrometric Devices.

The author discusses a device for measuring average rate of water flow used in Leningrad water supply systems and describes methods of calculating parameters of basic units of the device. There are 6 references: 4 Soviet and 2 English.

Salganer, I. Y. Use of Thermistors in Automobile Thermometers 220

The author discusses thermistor circuit for controlling temperature of automobile-engine cooling liquidiused in some Western countries. There are 5 references, all Soviet (including 1 translation).

LASHCHIVER, F.M., inzh.; VOROB'YEV, L.M., inzh.

Experience in wood drying using commercial frequency current.
Prom. energ. 19 no. 2:21-24 F '64. (MIRA 17:5)

VOROB'YEV, Leonid Mikhaylovich; MEDVEDEV, I.M., red.

[Navigation of spaceships] Navigatsiia kosmicheskikh korablei. Moskva, Voenizdat, 1964. 221 p.
(MIRA 17:9)

VOROB'IEV, L.M.

Applicability of Chaplygin's method to a system of differential equations of a special type. Uch. zap. mat. kaf. no.4:135-142 (MIRA 19:8)
'65.

AUTHOR: Vorob'yev, L.M. (Moscow) SOV/40-22-3-7/21

TITLE: The Solution of the Fundamental Problem of Exterior Ballistics (Resheniye osnovnoy zadachi vneshney ballistiki)

PERIODICAL: Prikladnaya matematika i mekhanika, 1958, Vol 22, Nr 3, pp 350 - 358 (USSR)

ABSTRACT: The author proposes an approximation method for the analytic solution of certain non-linear ballistic problems. The method is applied to two examples: 1. Determination of the motion of a heavy body with variable mass which is thrown against the horizon under a certain angle; 2. Determination of the analytic solution of the fundamental problem of exterior ballistics of projectiles for the general law of air resistance.

The first of these problems represents a certain generalization of a problem given by Tsiolkovskiy. The mass of the considered body is assumed to change according to a law :

$$M = M_0 f(t)$$

For the solution of the problem the field of gravity of the earth is assumed to be constant and the curvature of the

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earth is neglected. The atmosphere is immovably connected with the earth. Applying the purely analytic approximation method given in the first part of the paper the author succeeds in finding a general approximation for the solution of the generalized problem of Tsiolkovskiy. It is applied to a concrete numerical example and the result is given in table form.

In the last part of the paper the author gives under the same simplifying assumptions (plane ground and homogeneous field of gravity) a solution of the general problem of exterior ballistics of projectiles for which no restricting assumption is made concerning the character of the law of resistance of the projectile. The obtained analytic solution is compared with a solution which was obtained in numerical way by usual methods. The difference of the two solutions is less than one per cent.

There are 2 figures, 2 tables, and 7 references, 5 of which are Soviet, 1 English, and 1 German.

SUBMITTED: January 12, 1957

VOROB'YEV, L.N., dotsent, kandidat tekhnicheskikh nauk.

Equation of a curved beam axis. Nauch.trudy MPI 29:149-154 '55. (MLRA 10:1)
(Girders)

VOROB'YEV, L.M., mayor.

Using directional gyros. Vest.Vozd.Fl. 39 no.11:34-39 '56. (MIRA 10:3)

(Gyro compass)

AID P - 5221

Subject : USSR/Aeronautics - gyrocompass

Card 1/1 . Pub. 135 - 7/26

Author : Vorob'yev, L. M., Maj.

Title : Use of gyrocompass

Periodical : Vest. vozd. flota, 11, 34-39, N 1956

Abstract : The use of the Soviet GPK-52 gyrocompass is described in detail. One diagram, 1 graph. The article is of informative value.

Institution : None

Submitted : No date

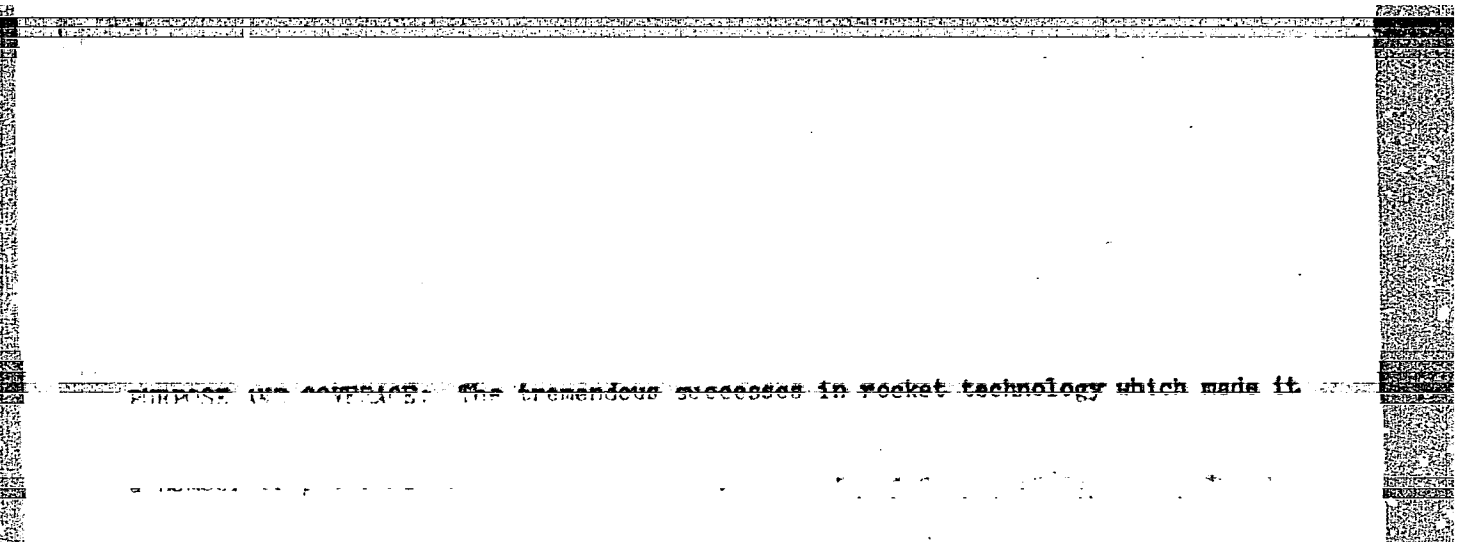
VOROB'YEV, L.M.

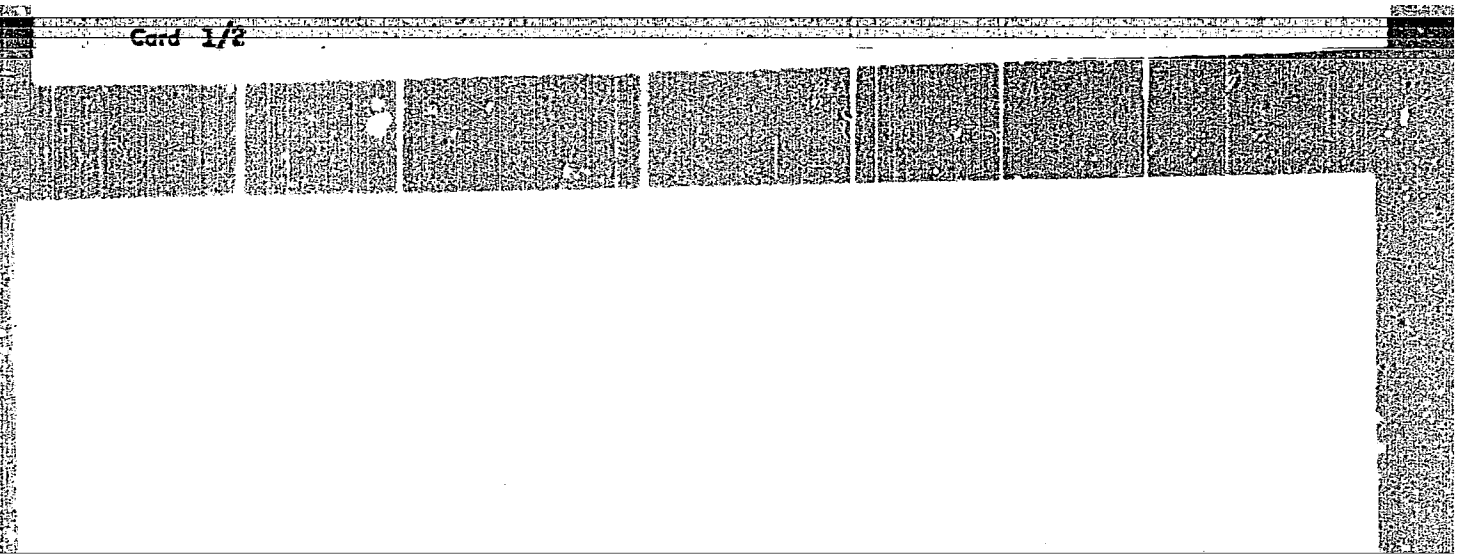
Applicability of S.A.Chaplygin's approximate integration to a certain class of ordinary non-linear differential equations of the second order. Usp.mat.nauk 11 no.1:181-185 Ja-F '55. (MLRA 9:6)
(Differential equations) (Integrals)

DENISOV, Viktor Grigor'yevich; ZELENKOV, S.V., inzh., retsenzent; VOROB'YEV, L.M., kand. tekhn. nauk, red.; ODINTSOV, V.A., kand. tekhn. nauk, red.; SAVCHENKO, V.F., kand. tekhn. nauk, red.; ODEROV, I.A., red.izd-va; KARPOV, I.I., tekhn. red.

[Aircraft navigation instruments] Navigatsionnoe oborudovanie letatel'nykh apparatov. Moskva, Oborongiz , 1963. 387 p. (MIRA 16:5)

(Aeronautical instruments)





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ACC NR: AP6010419 SOURCE CODE: UR/0020/66/167/002/0270/0273

27
C

AUTHORS: Vorob'yev, L. M.; Vorob'yeva, T. M.

ORG: none

TITLE: Toward the solution of variational problems of the nonclassical type

SOURCE: AN SSSR. Doklady, v. 167, no. 2, 1966, 270-273

TOPIC TAGS: variational method, variational problem, Euler equation, Lagrange multiplier, operations research

ABSTRACT: Solutions of variational problems of the nonclassical type are discussed. The problem prototype is one of finding coordinates from the set $x = (x^1, \ldots, x^N)$ of a system and its equations $u = (u^1, \ldots, u^M)$ which cause the functional $J = J(x_0, x_1)$ to take an extremal value, subject to satisfaction of the conditions

$$\dot{x} = f(x, u), \quad f = (f^1, \ldots, f^N)$$

and the inequality system

$$|g^l(x, u)| \leqslant 1, \quad l = 1, \ldots, L,$$

plus some terminal conditions

$$h(x_0, x_1) = 0, \quad h = (h^1, \ldots, h^R), \quad R \leqslant 2N - 1.$$

The coordinates x^n ($n = 1, \ldots, N$) are sought from a class of continuous functions,

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while the directions u^m (m = 1, ..., M) are in a class of piecewise-continuous functions. The transition from the nonclassical to the classical variational problem is made through the introduction of a set of "slack" vectors s such that the equality condition

$$\varphi = s(x, u, v) - g(x, u) = 0$$

can be stated. This condition (combined with the terminal conditions) transforms the problem into one which can be approached through classical variational techniques, most notably the Lagrange multiplier technique. The nature of the function ϕ is demonstrated for particular cases, and four computational examples are presented in illustration of the technique for finding the extremum. This paper was presented by Academician B. N. Petrov on 19 June 1965. Orig. art. has: 12 equations.

SUB CODE: 12/ SUBM DATE: 19Jun65/ ORIG REF: 006/ OTH REF: 002

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